What is claimed is:

1. A data compression method of obtaining compressed coded data by quantization of original data to obtain quantized data followed by coding and compression of the quantized data, the data compression method comprising the steps of:

classifying the quantized data into data having a value representing the quantized data and at least one set of classified data representing a data value other than the representative value while obtaining classification information data regarding the classification;

coding the classification information data according to a first coding method; and

obtaining the coded data by coding at least the classified data according to a second coding method, out of the classified data and the data having the representative value.

2. A data compression method as claimed in Claim 1, wherein the second coding method is different between the data having the representative value and each set of the classified data.

3. A data compression method as claimed in Claim 1 or 2, wherein the quantized data are obtained by carrying out wavelet transform on the original data followed by quantization thereof.

4. A data compression method as claimed in Claim 1 or 2, wherein the quantized data are obtained by carrying out DCT on the original data followed by quantization thereof.

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5. A data compression method as claimed in any one of Claims 1 to 4, wherein the data having the representative value are 0 data representing the value 0 of the quantized data , and the classified data are non-zero data representing a non-zero value of the quantized data.

6. A data compression method as claimed in any one of Claims 1 to 5, wherein the first coding method is any one of Huffman coding, run length coding, B1 coding, B2 coding, Wyle coding, Golomb coding, Golomb-Rice coding, and binary arithmetic coding.

7. A data compression method as claimed in any one of Claims 1 to 6, wherein the second coding method is any one of Huffman coding, universal coding, and multi-valued arithmetic coding.

8. A data compression method as claimed in any one of Claims 1 to 7, wherein the coded data are obtained by coding the classified data according to a third coding method, out of the classification information data and/or the data having the representative value and the classified data, in the case where the amount of the coded data is larger than a predetermined information amount determined based on the original data.

9. A data compression method as claimed in any one of Claims 1 to 8, wherein the third coding method is any one of Huffman coding, arithmetic coding, and PCM coding.

10. A data compression apparatus for obtaining compressed coded data by quantization of original data to obtain

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quantized data followed by coding and compression of the quantized data, the data compression apparatus comprising:

classification means for classifying the quantized data into data having a representative value representing the quantized data and at least one set of classified data having a data value other than the representative value and for obtaining classification information data representing the classification;

first coding means for coding the classification information data by using a first coding method; and

second coding means for coding at least the classified data out of the data having the representative value and the classified data, according to a second coding method.

11. A data compression apparatus as claimed in Claim 10, wherein the second coding means carries out the second coding method which is different between the data having the representative value and each set of the classified data.

12. A data compression apparatus as claimed in Claim 10 or 11, further comprising wavelet transform means for obtaining the quantized data by carrying out wavelet transform on the original data followed by quantization thereof.

13. A data compression apparatus as claimed in Claim 10 or 11, further comprising DCT means for obtaining the quantized data by carrying out DCT on the original data followed by quantization thereof.

14. A data compression apparatus as claimed in any one

of Claims 10 to 13, wherein the classification means classifies the quantized data by letting the data having the representative value be 0 data representing the value of 0 of the quantized data and letting the classified data be non-zero data representing a non-zero value of the quantized data.

15. A data compression apparatus as claimed in any one of Claims 10 to 14, further comprising:

judging means for judging whether or not the amount of the coded data is larger than a predetermined information amount determined based on the original data; and

third coding means for obtaining the coded data by coding at least the classified data according to a third compression method, out of the classification information data and/or the data having the representative value and the classified data, in the case where the judging means has judged the amount of the coded data to be larger than the predetermined information amount.

16. A computer-readable recording medium storing a program to cause a computer to execute a data compression method of obtaining compressed coded data by quantization of original data to obtain quantized data followed by coding and compression of the quantized data, the program comprising the procedures of:

classification of the quantized data into data having a value representing the quantized data and at least one set of classified data representing a data value other than the

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representative value, and acquisition of classification information data regarding the classification;

coding of the classification information data according to a first coding method; and

coding of at least the classified data out of the classified data and the data having the representative value, according to a second coding method.

17. A computer-readable recording medium as claimed in Claim 16, characterized by that the second coding method is different between the data having the representative value and each set of the classified data.

18. A computer-readable recording medium as claimed in Claim 16 or 17, the program further comprising the procedure of obtaining the quantized data by carrying out wavelet transform on the original data followed by quantization thereof.

19. A computer-readable recording medium as claimed in Claim 16 or 17, the program further comprising the procedure of obtaining the quantized data by carrying out DCT on the original data followed by quantization thereof.

20. A computer-readable recording medium as claimed in any one of Claims 16 to 19, wherein the procedure of classification is a procedure of classifying the quantized data by letting the data having the representative value be 0 data representing the value 0 of the quantized data, and by letting the classified data be non-zero data representing a non-zero

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value of the quantized data.

21. A computer-readable recording medium as claimed in any one of Claims 16 to 20, the program further including the procedures of:

5   judgment as to whether or not the amount of the coded data is larger than a predetermined information amount determined based on the original data; and

acquisition of the coded data by coding at least the classified data according to a third compression method out of the classification information data and/or the data having the representative value and the classified data, in the case where the amount of the coded data has been judged to be larger than the predetermined information amount.